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| 10/620,089 | 07/14/2003 | Philip Roland Lacourt | HP0083USNA | 7408 |

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WILMINGTON, DE 19805

EXAMINER

ZACHARIA, RAMSEY E

ART UNIT PAPER NUMBER

1773

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,089

Applicant(s)

LACOURT, PHILIP ROLAND

Examiner

Ramsey Zacharia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-15 and 20-26 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-5, 7-15 and 20-26 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The indicated allowability of claims 6-8, 10, and 20 is withdrawn upon further reconsideration and review. The new grounds of rejection follow.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3. Claims 7 and 8 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 1 now contains all the limitations recited in dependent claims 7 and 8.

Claim Rejections - 35 USC § 112

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 1 recites the limitation "the PTM bonding layer" on line 32 of the claim. There is insufficient antecedent basis for this limitation in the claim.

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Claim Language

6. For the purpose of examination, the thicknesses at the end of claim 1 are taken to refer to the thickness of the adhesive primer layer and not the PTM bonding layer. Support for this can be found on page 12, lines 16-19 of the instant specification.

4, 5, 9, 14, 15, 23, 24, and 26

Claim Rejections - 35 USC § 103

7. Claims 1-5, 7-15, 20-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Effenberger et al. (U.S. Patent 5,238,748).

Effenberger et al. teach a laminate comprising a layer of polyimide, a fluoropolymer layer, and an adhesive layer (column 4, lines 42-47). The adhesive of the adhesive layer may be a thermally compatible TFE copolymer or a blend of the thermally compatible TFE copolymer and PTFE (column 4, lines 45-50). The fluoropolymer layer may also be a thermally compatible TFE copolymer or a blend of the thermally compatible TFE copolymer and PTFE (column 3, lines 31-34). The preferred thermally compatible TFE copolymers are FEP and PFA (column 4, lines 48-50). Blend should contain at least 40 vol% (~ 40 wt%) of PTFE (column 6, lines 14-15), i.e. as much as 60% of the thermally compatible TFE copolymer. The PFA has a melting point of 305 °C. (column 6, lines 6-7). The laminate may be used as tape-wrapped insulation for wires (column 7, lines 39-44). The polyimide layer has a thickness of 0.5-2.0 mil, i.e. ~ 12.5-50 µm (column 5, lines 58-59). In the embodiment of Example 1, the thicknesses of the layers are as follows: 2 mil (i.e. ~ 50 µm) for the polyimide layer, 0.05 mil (~ 1.25 µm) for the adhesive layer, and 0.5 mil (~ 12.5 µm) for the fluoropolymer layer (column 6, 42-47). A PTFE

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dispersion is coated on the adhesive layer to form a PTFE layer having a thickness of 0.5 mil thick ($\sim 12.5 \mu\text{m}$) (column 6, lines 47-50). This PTFE layer reads on the exterior layer of instant claim 2. The laminate is then baked and thermally treated which should result in at least a partial sintering of the PTFE dispersion particles (column 6, line 52-column 7, line 8).

Regarding claim 1, Effenberger et al. do not disclose an embodiment wherein the fluoropolymer layer comprises PFA and the adhesive layer comprises FEP. However, both the fluoropolymer layer and the adhesive layer may be formed of thermally compatible TFE copolymer or a blend of the 60% thermally compatible TFE copolymer and 40% PTFE and both PFA and FEP are cited as preferred thermally compatible TFE copolymers.

It would be obvious to one skilled in the art to select any of the materials disclosed as suitable for the fluoropolymer layer (including PFA or a blend of as little as 40% PTFE and as much as 60% PFA) and any of the materials disclosed as suitable for the adhesive layer (including FEP or a blend of as little as 40% PTFE and as much as 60% FEP).

Regarding claim 20, the bond strength is a function of the adhesives and materials to be bonded together. Since Effenberger et al. disclose the same materials used in the instant invention (i.e. FEP for the adhesive layer and PFA for the fluoropolymer layer), the adhesive and fluoropolymer layers should intrinsically possess the same bond strength.

Regarding claims 4 and 5, Effenberger et al. do not specify that the fluoropolymer layer on the opposite side of the polyimide layer from the PTFE layer comprises FEP. In the embodiment of Example 1, this layer is formed from a blend of PTFE and PFA.

However, Effenberger et al. do teach the equivalence of thermally compatible TFE copolymers (e.g. PFA and FEP) and blends of PTFE with the thermally compatible TFE

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copolymers (column 4, lines 42-50). That is, Effenberger et al. show that FEP and blends of PTFE and PFA are functionally equivalent materials for the practice of their invention.

Therefore, because these two materials were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute FEP for one of the PTFE/PFA blend layers.

Regarding claim 26, Effenberger et al. do not teach the addition of one of the additives recited in instant claim 26 into the polyimide layer.

However, Effenberger et al. do teach the addition of carbonates that evolve carbon dioxide, minerals containing water of hydration, and polymers that decompose without producing carbonaceous or other conductive by-products to improve the arc tracking properties of the laminate (column 5, lines 9-27). While Effenberger et al. teach the incorporation of these additives into the fluoropolymer layers as opposed to the polyimide layer, Effenberger et al. also notes that it is well known in the art that polyimide films can also suffer catastrophic failure as a result of arc tracking (column 1, line 57-column 2, line 4). Therefore, it would have been obvious to one skilled in the art to incorporate additives (such as carbonates that evolve carbon dioxide, minerals containing water of hydration, and polymers that decompose without producing carbonaceous or other conductive by-products) into the polyimide layer to improve the arc tracking properties of polyimide layer, and thus the laminate as a whole.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Effenberger et al. (U.S. Patent 5,238,748) in view of Herbreteau (U.S. Patent 4,271,226).

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Effenberger et al. teach or suggest all the limitations of claim 25, as outlined above, except for the degree of overlap when insulating wire by wrapping the laminate around the wire.

Herbreteau is directed to insulation for a cable formed by wrapping a tape around the cable (abstract). Herbreteau teaches that the level of insulation required is a function of the degree of overlap (column 4, lines 13-22). That is, the degree of overlap is a results effective variable that affects the level of insulation provided. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the degree of overlap when wrapping the tape of Effenberger et al. around a wire depending on the level of insulation required, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached at (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Ramsey Zacharia', is positioned above the printed name.

Ramsey Zacharia
Primary Examiner
Tech Center 1700